Claims listing:

1. (currently amended) A body fluid sampling device comprising:

a cartridge containing a plurality of penetrating members;

a drive force generator coupled to a processor and configured to be coupled to a penetrating member;

a penetrating member coupled to the drive force generator, the processor configured to provide information relative to a depth of penetration of a penetrating member through a skin surface; and

a plurality of analyte detecting members each associated with a penetrating member, the plurality of analyte detecting members being attached to a bottom surface of ~~on~~ said cartridge, wherein a first portion of the analyte detecting members measure a first analyte and a second portion of the analyte detecting members measure a second analyte~~; and~~

~~a penetrating member driver for moving an active one of said penetrating members from a first position outward to penetrate tissue~~.

2. (original) The device of claim 1 wherein the penetrating member driver is coupled to a position sensor, said position sensor used to detect a position of the active one of said penetrating member while penetrating tissue.

3. (original) The device of claim 1 wherein said first portion of analyte detecting members are all located on one area of the cartridge while said second portion of analyte detecting members are all located on a second area of the cartridge.

4. (original) The device of claim 1 wherein said first portion of analyte detecting members measure analytes related to blood gases.

5. (original) The device of claim 1 wherein said second portion of analyte detecting members measure analytes related to electrolytes.

6. (original) The device of claim 1 wherein said second portion of analyte detecting members measure analytes related to at least one of the following: blood gases, electrolytes, coagulation, or metabolites.

7. (currently amended) The device of claim 1 further comprising a handheld, two way communication, data management system.

8. (original) The device of claim 1 further comprising an integrated sampling/POC testing device for one step sample to read.

9. (original) The device of claim 1 wherein body fluid requirement for each analyte detecting member is less than 1 microliter.

10. (currently amended) ~~The device of claim 1 further comprising~~ A body fluid sampling device comprising:

a cartridge containing a plurality of penetrating members;

a plurality of analyte detecting members each associated with one of the plurality of penetrating members on said cartridge, wherein a first portion of the analyte detecting members measure a first analyte and a second portion of the analyte detecting members measure a second analyte;

a penetrating member driver for moving an active one of said penetrating members from a first position outward to penetrate tissue; and

many tests on a single penetrating member/analyte detecting member combination.

11. (currently amended) The device of claim 1 ~~further comprising~~ wherein each segment of the cartridge has the same test or the cartridge can be divided into regions with a plurality of specific tests.

12. (currently amended) The device of claim 1 ~~further comprising~~ wherein all tests are run, ~~subset reported, cost of test only for tests required~~ while only those tests, which are desired at the time the sample is taken need to be reported.

13. (original) The device of claim 1 wherein said analyte detecting members use either electrochemical, optical, or combinations of the measurement techniques.

14. (currently amended) The device of claim 1 further comprising a companion cartridge wherein additional analyte detecting members are coupled for more complex less common tests~~, only used~~ if required.

15. (currently amended) The device of claim 1 ~~further comprising~~ wherein ~~analyte detecting members formed on~~ the underside of the cartridge~~, said members~~ is used for tests requiring larger surface area such as for washing steps in hematology or cell counting.

16. (currently amended) ~~The device of claim 1 further comprising~~ A body fluid sampling device comprising:

a cartridge containing a plurality of penetrating members;

a plurality of analyte detecting members each associated with one of the plurality of penetrating members on said cartridge, wherein a first portion of the analyte detecting members measure a first analyte and a second portion of the analyte detecting members measure a second analyte;

a penetrating member driver for moving an active one of said penetrating members from a first position outward to penetrate tissue;

an upstream fixed volume chamber which empties instantaneously when full so that all tests start simultaneously.

17. (currently amended) The device of claim 1 further comprising vents, seals, and/or fill detectors.

18. (currently amended) The device of claim 1 further comprising a cartridge vent system that opens by piercing mechanism to allow on board calibration fluids to start flowing into relevant fluidic structures.

19. (currently amended) The device of claim 1 ~~further comprising~~ wherein the device optically interrogates from bottom as in F1 optical disclosure.

20. (currently amended) ~~The device of claim 1 further comprising~~ A body fluid sampling device comprising:

a cartridge containing a plurality of penetrating members;

a plurality of analyte detecting members each associated with one of the plurality of penetrating members on said cartridge, wherein a first portion of the analyte detecting members measure a first analyte and a second portion of the analyte detecting members measure a second analyte;

a penetrating member driver for moving an active one of said penetrating members from a first position outward to penetrate tissue;

an array detection having a storage area having a sensing area;

another storage area having an enzyme area separate from the sensing area prior to tissue piercing;

wherein said storage areas and sensing area are positioned to cause fluid to first flow to the enzyme area and then to the sensing area.

21. (currently amended) A method of body fluid sampling comprising:

moving a penetrating member ~~at~~ conforming to a selectable velocity profile or motion waveform;

piercing another storage area having an enzyme area separate from the sensing area prior to piercing;

causing fluid to a storage area having a sensing area;

piercing first flow to the enzyme area and then to the sensing area.

22. (currently amended) The ~~device~~ method of claim 21 further comprising storing said enzyme area in an inert environment different from an environment for the sensing area.

23. (currently amended) A device for body fluid sampling usable with a cartridge housing a plurality of penetrating members, the device comprising:

a housing;

a penetrating member driver coupled to said housing and for use with said cartridge;

a processor for controlling said penetrating member driver to move at least one of said penetrating members at velocities which conform with a selectable velocity profile;

a storage area having a sensing area;

another storage area having an enzyme area separate from the sensing area prior to piercing;

wherein said penetrating member pierces opens both storage areas upon member actuation and ~~causing~~ causes body fluid to first flow to the enzyme area and then to the sensing area.